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d) removing said first array of pinholes and replacing said pinhole with the article
to be viewed and

e) illuminating said article by a coherent beam [like the above] of the same
wavelength as one of the above coherent beams so that light therefrom passes
through or reflects off said objective and through an imaging lens to diffract
through or off said hologram to reconstruct the original reference beam but
with article information retained, to correct for defects in said objective and to
provide an accurate image in a recording medium or for viewing.

~~In claim 38, line 1, after "corrector", insert --for a microscope--.~~

~~In claim 39, line 1, after "correction", insert --in a microscope--.~~

~~In claim 8, line 1, after "up to", insert --at least-- and delete "or more".~~

~~In Claim 16, line 2, after "up to", insert --at least-- and delete "or more".~~

~~In Claim 25, line 2, after "up to", insert --at least-- and delete "or more".~~

~~In Claim 26, line 1, after "up to", insert --at least-- and delete "or more".~~

~~In Claim 33, line 2, after "up to", insert --at least-- and delete "or more".~~

REMARKS

Claims 1-39 are in the present application. Such claims have been amended
as indicated to meet certain objections of the Office Action and for clarity and no new
matter has been added.

Also claim 36 has been rewritten for clarity, as indicated and avoids any overlapping recitations of elements and is believed to clearly define a novel method of invention for which no reference is cited.

That is, claim 36, as amended, is believed to recite additional novelty not yet addressed by previous Office Actions, in which a contour map showing various heights of an object, under a microscope, can be determined, as more fully described in the first full paragraph of page 14 and shown in Figures 15 and 16. That is, no art has been cited which remotely suggests the novelty of applicant's claim 36.

The Office Action rejection of claims 1, 2-14, 15-17, 18, 19, 20, 21-31, 32-36, 37, 38 and 39 as obvious under 35 U.S.C. 103 (a) over the Schock et al Article in view of patent '466 to Friedl, is respectfully traversed.

As noted in the previous response, Schock's beams, per his Figure 7, go in the wrong direction for viewing an object. Schock's Figure 7 suggests a photoreducing or micromachining operation which is unsuitable for viewing an article.

The Schock et al disclosure of photoreducing or micromachining is believed not

properly combinable with the Friedl patent, which is directed to receiving an image.

That is, the Friedl structure is that of a telescope where an incoming parallel beam is focused. Applicant's claims, in contrast, deal with a microscope wherein a point source beam is focused. These are two clearly different structures and methods, as pointed out in applicant's claims.

*Corrective
action
is
not
the
aberration
&
the
lens
elements.*

Thus there is no suggestion of combining the disparate references of Schock et al. which discloses a photoreducer and of Friedl et al. which discloses a complex telescope, which references direct laser beams in opposite directions and for different purposes,

unless one has in view applicant's own disclosure. That is, one would not be tempted to make such combination unless influenced by the subtle but powerful attraction of hindsight-based obviousness. Combining such references simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability. See In re Dembicizak, 50 U.S.P.Q. 2d (1999).

That is, it is not clear why these references are combined in the first place. Schock writes a hologram for photoreduction in his Figure 7, not image viewing. Friedl et al writes a hologram from one lens which is enlarged to a second hologram which is used to correct for another lens which can have different aberrations than the first lens. Such process is expensive, time-consuming and complex and is used to correct for a telescope image.

Thus, while both references write holograms to correct for lenses, that is not the end of the novelty question. It is, what is the purpose or utility of a holographically corrected lens system? In Schock et al, per his Figure 7, it is for directing beams of light to a point in a pipe in a photoreducing process. In Friedl et al., one corrects for two lenses with two holograms in a telescope.

Per the present invention, applicant's apparatuses are less complex and more reliable in that he makes a hologram from a lens and uses it to correct for the same lens. Accordingly, applicant's invention makes possible various size microscopes which can provide clear images from flawed and low cost objectives, which microscopes are not suggested by the applied references.

Now the Office Action states at page 5 that applicant's arguments concerning microscopic viewing of an article are not found valid since microscopic viewing of an

article is not a featured claim in the claims.... However, as indicated above, all of applicant's claims have now been amended or limited to a microscope structure or microscope method and thus are believed to clearly distinguish from the applied two references.

Now the PTO has the burden of establishing a *prima facie* case of obviousness. That is, the prior art references must teach or suggest all the limitations of the present claims.

As noted above, the present claims are directed to the narrow novelty of a holographically corrected microscope and method therefor, which narrow novelty is not suggested by the two prior art references, as discussed above.

As to applicant's claims 21 *et seq.*, these are directed to a holographic microscope which employs an array of pinholes, which array has not been seen in the prior art and certainly not in a microscope per applicant's claims.

As to the benefit of having a pinhole array over a single pinhole system, the pinhole array obtains resolution over a relatively large field of view compared with the view through a single pinhole. That is, the use of an array of pinholes to correct an objective in a microscope and to have a broad field of view is a structural feature of claims 21 *et seq.* that is nowhere seen in the prior art.

This is even more true of the method defined in claim 36, wherein a reference beam is added to the reconstruction of the hologram (e.g. in Figure 15), that interferes with the hologram image so as to produce a fringed pattern thereon to permit extracting height information for a contour map of the object viewed. That is, as no cited reference remotely suggests the method of such claim, it is believed to have considerable novelty.

In sum, applicant has considerably narrowed the claims in the present application, such as by removing the word "like" in claims 1 *et seq.* and removing "or more" in claims 8 *et seq.*.

Further the observation of the above Office Action on page 5, that applicant's claims were not limited to a microscope has been heeded and the claims amended accordingly to more narrowly define the present invention.

In view of the foregoing, the claims of record, as amended, are believed distinguished over the applied art and in condition for allowance. Early notice of allowance is requested.

In accordance with Section 714.01 of the M.P.E. P., the following information is presented in the event that a call may be deemed desirable by the Examiner: Thomas C. Stover, A/C 781-377-3779.

Respectfully submitted,



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